

INTERNATIONAL HEALTH NEWS

Your Gateway to Better Health!

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Editorial

It is becoming increasingly clear that vitamin deficiencies are widespread despite official assurances that a varied diet provides all the nutrients we require. The latest evidence comes from a joint American-Finnish study which found that 90% of a large group of smokers were deficient in folic acid and 54% were deficient in vitamin B6. Other studies have found widespread deficiencies in vitamins A and D and magnesium.

Yet, despite these findings, health authorities are very, very shy about recommending supplementation. Food fortification, on the other hand, is widely accepted even though the ingredients used are exactly the same as those found in supplements.

The latest entry into the food fortification program is folic acid. By law it must be added to all cereal grains in the USA in amounts sufficient (theoretically) to provide an average intake of 100 micrograms/day. Unfortunately, this amount is quite insufficient to prevent either neural tube defects or heart disease. In this issue we report that the optimum intake of folic acid is 800 micrograms/day. Other supplements in the news this month are vanadyl sulfate for improving glucose control in diabetics, vitamin B6 to prevent lung cancer, beta-carotene to ease the symptoms of cystic fibrosis, ginkgo biloba for alleviating intermittent claudication, and vitamin C to help us live longer.

The benefits of supplements to help maintain health and alleviate disease are becoming increasingly obvious. Stay tuned for more developments in upcoming issues.

*Yours in health,
Hans*

May Highlights

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LETTERS TO THE EDITOR

Where can one find information on how nutrition affects hearing or even hearing loss? Since reading on your website that mercury can cause hearing loss, is there anything one can do nutritionally to prevent mercury damage to hearing short of removing the dental amalgam fillings?

SB, CANADA

Editor: *It is very hard to get rid of the body's mercury burden without complete amalgam removal and thorough detoxification.*

Supplementation with alpha-lipoic acid and/or n-acetyl-cysteine (NAC) may help, but it would probably take a very long time to feel the effect. Untreated diabetes can cause hearing loss as can a deficiency of vitamin B12 and folic acid. You can find more information on MEDLINE (accessible from the IHN website – <http://www.yourhealthbase.com>). Just type in hearing loss AND nutrition in the search box and you will get about 70 references.

Thank you for your excellent report on Parkinson's disease. Are any of the following minerals found in Centrum Silver considered toxic: magnesium, zinc, selenium, copper, manganese, chromium, molybdenum, boron, nickel, and vanadium?

HHL, USA

Editor:

Magnesium – Supplementing with 400-500 mg/day is considered safe except in people with kidney disease and some forms of severe heart disease.

Zinc – Supplementing with 15-20 mg/day is considered safe.

Selenium – 200 micrograms/day is normally recommended. Probably should not exceed 300 micrograms/day.

Copper – 10% of zinc intake – not to exceed 3 mg/day.

Manganese – 2-5 mg/day is usual recommendation. Substantially higher for therapeutic purposes.

Chromium – 200 micrograms/day is usual recommendation. Trivalent chromium is quite safe.

Molybdenum – 200-500 micrograms/day is usual recommendation.

Boron – 3-9 mg/day is considered safe.

Nickel – There is no safe limit for nickel. I would not include it in my supplement.

Vanadium – I am not sure that this is really required, but 50-100 micrograms/day is probably safe.

I would not supplement with copper, zinc or manganese if I had Parkinson's or was worried about developing it. Iron, of course, is definitely out. You can find the latest information on Parkinson's at www.thorne.com/altmedrev/.fulltext/5/6/502.html.

ABSTRACTS

Folic acid requirements defined

CHICHESTER, UNITED KINGDOM. The U.S. government has mandated the fortification of all cereal grains with 0.14 mg (140 micrograms) of folic acid per 100 grams of grain. The aim of this measure is to reduce the risk of women giving birth to babies with neural tube defects (spina bifida). The fortification would theoretically supplement a person's diet with about 0.1 mg (100 micrograms) of folic acid per day.

Folic acid supplementation has also been found useful in lowering homocysteine levels and thereby reducing the incidence and mortality from ischemic heart disease (angina and heart attack). A dosage of 1 mg (1000 micrograms) per day has been found to result in about a 25 per cent decrease in homocysteine concentration; this is estimated to correspond to a 15 per cent reduction in mortality from ischemic heart disease. Higher dosages (up to 5 mg/day) have not been found to have any greater effect than the 1 mg/day dose. British researchers have now addressed the question of how much folic acid (in

supplement form) is needed to achieve the maximum homocysteine reduction.

Their clinical trial involved 151 patients with ischemic heart disease who were randomized to receive 0.2 mg, 0.4 mg, 0.6 mg, 0.8 mg, 1 mg or a placebo daily for a three-month period. The participants' blood levels of folate and homocysteine were measured before the start of supplementation, at the end of the supplementation period, and three months later. The maximum median reduction in homocysteine levels (23 per cent) was observed at a supplementation level of 0.8 mg/day. The currently recommended daily intake of 200-400 micrograms/day achieved only a 10 per cent reduction in homocysteine levels. Homocysteine levels returned to their pre-trial levels after three months without supplementation indicating that folic acid supplementation must be continuous and indefinite if homocysteine levels are to be kept in check. The researchers conclude "It would be reasonable for clinicians to consider advising patients with ischemic heart disease to

take 0.8 mg (800 micrograms) of folic acid each day.”

Wald, David S., et al. *Randomized trial of folic acid supplementation and serum homocysteine levels. Archives of Internal Medicine*, Vol. 161, March 12, 2001, pp. 695-700

Vanadyl sulfate benefits diabetics

SAN ANTONIO, TEXAS. Many studies have shown that vanadium has insulin-like effects in the liver, skeletal muscle and fat tissue. Animal studies have shown that vanadium improves glucose metabolism and stimulates glycogen formation. What is much less clear is whether vanadium supplementation is of actual benefit to patients with type 2 diabetes. A team of American and Argentine researchers now provides at least a preliminary answer to this question. Their recently reported clinical trial involved 11 patients with type 2 diabetes. The patients were given 150 mg/day of vanadyl sulfate (50 mg with breakfast, lunch and dinner) for a six-week period. The treatment significantly improved glycemic control. Fasting plasma glucose (FPG) decreased from 194 to 155 mg/dL

(a 20 per cent drop), hemoglobin A1c decreased from 8.1 to 7.6 per cent, and fructosamine decreased from 348 to 293 micromol/L (a 16 per cent drop). As an added benefit the treatment also lowered total cholesterol and low-density lipoprotein cholesterol (LDL) levels by 9 per cent. High-density lipoprotein cholesterol level and blood pressure were not affected by the vanadyl sulfate supplementation. The researchers conclude that vanadium supplementation is well tolerated and improves glycemic control in type 2 diabetes patients.

Cusi, K., et al. *Vanadyl sulfate improves hepatic and muscle insulin sensitivity in type 2 diabetes. Journal of Clinical Endocrinology & Metabolism*, Vol. 86, March 2001, pp. 1410-17 [64 references]

Beta-carotene benefits cystic fibrosis patients

VIENNA, AUSTRIA. Cystic fibrosis is characterized by abnormal mucus secretion and chronic lung inflammation. It is postulated that the increased free radical generation from activated neutrophils (killer cells) creates an oxidant/antioxidant imbalance. Supplementation with vitamin E (5-15 mg/kg/day), a powerful antioxidant, is an accepted part of the treatment of cystic fibrosis (CF). Austrian researchers now report that supplementation with beta-carotene (in addition to vitamins A, C and E) is effective in normalizing blood levels of beta-carotene in CF patients and has significant clinical benefits.

The randomized, double-blind, placebo-controlled study involved 24 CF patients (average age of 11 years). Thirteen were randomized to receive supplementation with synthetic beta-carotene at a dose of 1 mg/kg/day (maximum 50 mg/day) for three months followed by a dose of 10 mg/day for a further three months. The remaining 11 patients received placebos. The blood level of beta-carotene increased from an abnormally low level of 0.08 micromol/L to 0.56 micromol/L during the first three months, but dropped back to 0.32 micromol/L during the following three months of the low dose supplementation (10 mg/day).

Healthy controls had an average beta-carotene level of 0.27 micromol/L.

The researchers also noted a significant decrease in the number of days the patients in the high dose supplementation group needed antibiotics to control their symptoms. Before supplementation antibiotics were required on an average of 14.5 days in a three-month period; during the high dose period this dropped to 9.8 days; it increased slightly to 10.5 days in the low dose period. In contrast, the placebo group needed antibiotics for an average 24.8 days during the first three months and 18.5 days during the last three months. The trial period coincided with the cold season.

The concentration of malondialdehyde, a marker of lipid peroxidation, decreased significantly during the high dose supplementation period, but not during the low dose period. Supplementation was well tolerated in all the patients. The researchers conclude that high dose supplementation with beta-carotene may benefit CF patients. **Editor's Note:** The benefits could possibly be enhanced by using beta-carotene from natural sources and by taking it in combination with a fat-containing meal.

Vitamin C and longevity

CAMBRIDGE, UNITED KINGDOM. A couple of recent test tube experiments widely reported by the popular press have managed to create doubt as to the benefits of vitamin C. A report just released by researchers at Cambridge University will hopefully lay these doubts to rest. The study measured blood plasma concentrations of ascorbic acid (vitamin C) in 8,860 men and 10,636 women. The study participants were followed for approximately four years. During this period a total of 692 men and women died - a total of 268 from cardiovascular disease, 189 from ischemic heart disease (angina or heart attack) and 284 from cancer. After adjusting for age, systolic blood pressure, cholesterol, body mass index, smoking, diabetes and the use of supplements the researchers concluded that men with an ascorbic acid level of 72.6 micromol/L or higher had a 36 per cent lower risk of dying from cardiovascular disease than did men with a level of 20.8 micromol/L or lower. The decrease in risk for death from ischemic heart disease, cancer and all causes was 37 per cent, 24 per cent and 23

per cent respectively. Women with a plasma level of 85.1 micromol/L had a 19 per cent lower cardiovascular disease mortality, a 44 per cent lower ischemic heart disease mortality, and a 15 per cent lower all-cause mortality than did women with an ascorbic acid level of 30.3 micromol/L. There was no correlation between cancer mortality and vitamin C level among the women.

The researchers conclude that a 20 micromol/L rise in plasma ascorbic acid level can reduce all-cause mortality rate by 20 per cent independent of age and other risk factors. A 20 micromol/L increase can be obtained by increasing fruit and vegetable intake by 50 grams per day. The researchers also noted that higher vitamin C levels were associated with lower systolic blood pressure and body mass index as well as with a higher level of "good" (HDL) cholesterol.

Khaw, Kay-Tee, et al. Relation between plasma ascorbic acid and mortality in men and women in EPIC-Norfolk prospective study: a prospective population study. The Lancet, Vol. 357, March 3, 2001, pp. 657-63

Ipriflavone for osteoporosis

BALLERUP, DENMARK. Ipriflavone (7-isopropoxy-isoflavone) is a synthetic daidzein derivative of natural isoflavones. Animal and some human experiments have found ipriflavone effective in inhibiting bone resorption and thereby preventing bone loss (osteoporosis). A group of Belgian, Danish, French and Italian researchers now report that ipriflavone supplementation does not prevent bone loss in postmenopausal women. Their randomized, double-blind, placebo-controlled, four-year clinical trial involved a total of 474 postmenopausal women (aged 45 to 75 years) with baseline bone mineral densities (BMDs) of less than 0.86 grams/cm². Half the women (234) were assigned to receive 200 mg of ipriflavone three times per day with meals while the other half (240) received placebo capsules. All the participants also received 500 mg per day of calcium. After three years there were no significant differences between the ipriflavone and the placebo groups in the annual change in BMD

(lumbar spine and thigh bone). There also were no significant differences in the number of new vertebral fractures experienced by the women in the two groups. The researchers did note a significant drop in lymphocytes in the blood cells of the women in the ipriflavone group. This drop, however, did not translate into an increased number of infections or other immune system related effects. The researchers conclude that ipriflavone does not prevent bone loss in postmenopausal women and may induce lymphocytopenia (a decrease in lymphocyte concentration) in a significant number of women. NOTE: This study was funded by Cheisi Farmaceutici (Parma, Italy) a manufacturer of ipriflavone.

Alexandersen, Peter, et al. Ipriflavone in the treatment of postmenopausal osteoporosis: a randomized controlled trial. Journal of the American Medical Association, Vol. 285, March 21, 2001, pp. 1482-88

Food poisoning from tuna burgers

RALEIGH, NORTH CAROLINA. Health officials in North Carolina have noticed a substantial increase in the number of histamine poisonings reported in the state. A total of 22 cases were reported during the period July 1998 to February 1999. This compares to an average two cases per year during the period 1994 to 1997. The symptoms of histamine poisoning include tingling and burning sensations around the mouth, headache, facial flushing and sweating, rash and itching on the upper body, abdominal cramps, nausea, vomiting, diarrhea, and heart palpitations. The symptoms appear minutes to a few hours after ingestion of contaminated food and are often severe enough for the patient to seek emergency care. They can sometimes be similar to those observed in coronary heart disease thus increasing the possibility of misdiagnosis and

invasive medical intervention. The most common source of histamine poisoning is fish, tuna especially, that has been improperly refrigerated. Of the 22 cases in North Carolina 18 (82 per cent) involved tuna burgers served in restaurants and two involved the consumption of tuna salads. Health officials determined that in 19 cases the tuna used to prepare the burgers and salads was frozen and thawed more than once before serving. Restaurant inspections also found inadequate refrigeration in two of the five restaurants accounting for 64 per cent of the cases. Be careful where you eat your tuna burgers!

Becker, Karen, et al. Histamine poisoning associated with eating tuna burgers. Journal of the American Medical Association, Vol. 285, March 14, 2001, pp. 1327-30

Ginkgo biloba and intermittent claudication

EXETER, UNITED KINGDOM. Intermittent claudication, an early symptom of peripheral arterial disease, manifests itself as cramping pain that is induced by exercise and relieved by rest. It is caused by an inadequate supply of blood (atherosclerosis) to the affected muscles, most often those of the calf and leg. The incidence of intermittent claudication (IC) increases sharply with age and it is estimated that over 1.5 million Americans over the age of 65 years suffer from this disorder. Paradoxically, the most effective treatment of IC is regular physical exercise. The pharmaceutical drugs prescribed for the condition, pentoxifylline and cilostazol, are not terribly effective and are associated with serious side effects including heart arrhythmias and gastrointestinal bleeding. Researchers at the University of Exeter now report that ginkgo biloba (120 to 160 mg of standardized extract per day) is quite effective in increasing the pain-free and maximal walking distance of IC patients. Their meta-analysis covered eight randomized, placebo-controlled,

double-blind trials. The researchers found that ginkgo biloba supplementation increased the average pain-free walking distance by 34 meters and the maximal walking distance by 36 to 189 meters when compared with placebo. This improvement is significantly better than that obtained with pharmaceuticals, but not as good as that obtained with exercise training – an average increase of 139 meters in pain-free walking distance. The researchers point out that the daily cost of ginkgo biloba therapy (120 mg/day) ranges from \$0.41 to \$0.84 in the USA as compared to the daily cost of treatment with pentoxifylline (1200 mg) at \$1.83 to \$1.93 and for cilostazol (200 mg) at \$2.90 to \$4.23. Side effects of ginkgo biloba supplementation were found to be rare, mild, and temporary.

Pittler, Max H. and Ernst, Edzard. Ginkgo biloba extract for the treatment of intermittent claudication: a meta-analysis of randomized trials. American Journal of Medicine, Vol. 108, March 2000, pp. 276-281 [56 references]

Vitamin B6 lowers lung cancer risk

HELSINKI, FINLAND. It is estimated that 172,000 new cases of lung cancer would be diagnosed in the US in 1999. The survival rate for lung cancer victims is very poor so preventive

measures are of utmost importance. A team of researchers from the National Cancer Institute in the US and the National Public Health Institute in Finland now reports that men who have high

blood levels of vitamin B6 (pyridoxine) are much less likely to develop lung cancer than are men with lower levels.

The study was part of the Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study and involved 300 male smokers with lung cancer and 300 healthy controls (also smokers). All the participants had their blood serum levels of folic acid, vitamin B6, vitamin B12, and homocysteine measured. No significant differences in folic acid, vitamin B12 and homocysteine levels were noted between the two groups. However, after adjusting for body mass index, years of smoking, and the number of cigarettes smoked a day the researchers noted a very significant protective effect of vitamin B6. The men with a serum level

above 35 nmol/L had about half the risk of lung cancer than did the men with a level at or below 20.6 nmol/L. The researchers also found that 54 per cent of all study participants (cases and controls) were deficient in vitamin B6, 90 per cent were deficient in folic acid, and 25 per cent had elevated serum homocysteine levels. They speculate that vitamin B6's protective effect is related to its known immune system enhancing effects and its key role in the synthesis of the important antioxidant glutathione.

Hartman, Terryl J., et al. Association of the B-vitamins pyridoxal 5'-phosphate (B6), B12, and folate with lung cancer risk in older men. American Journal of Epidemiology, Vol. 153, April 1, 2001, pp. 688-94 [51 references]

DHEA helps prevent heart disease

WORCHESTER, MASSACHUSETTS. DHEA (dehydroepiandrosterone) and its sulfate (DHEAS) are important hormones. Blood levels of DHEA and DHEAS decline with age and this decline has been implicated in such conditions as diabetes, obesity, arthritis, and elevated cholesterol levels. Now researchers at the University of Massachusetts Medical School report that low DHEA levels are associated with a significantly increased risk of ischemic heart disease (angina and heart attack). Their study involved 1,167 men between the ages of 40 and 69 years who were enrolled between 1987 and 1989. Nine years later 151 of the men had developed or had died from ischemic heart disease (IHD). Diabetes, age, hypertension, and smoking were confirmed as the most potent risk factors for IHD. However, after accounting for these and other known risk factors the researchers concluded that men with low DHEA

levels (serum DHEAS below 1.6 microgram/mL) had a 1.6 times higher risk of developing IHD than did men with higher levels (serum DHEAS between 3.31 and 12.30 micrograms/mL). The risk increase with low DHEAS levels was particularly significant (two-fold) among men with normal blood pressure and among men in the 50 to 59 year age group (2.5-fold). The researchers point out that DHEA has been demonstrated to inhibit low-density lipoprotein oxidation, plaque formation, platelet aggregation, and cell proliferation. They caution that further studies are required to determine whether supplementing with DHEA is beneficial.

Feldman, Henry A., et al. Low dehydroepiandrosterone and ischemic heart disease in middle-aged men: prospective results from the Massachusetts Male Aging Study. American Journal of Epidemiology, Vol. 153, January 1, 2001, pp. 79-89 [79 references]

Bypass surgery creates mental problems

BALTIMORE, MARYLAND. Coronary-artery bypass grafting (bypass surgery) is a very popular surgical procedure with more than 500,000 operations performed every year in the US alone. While the operation may improve heart performance it is now clear that it can seriously affect the brain. The risk of a stroke immediately following the procedure is 1.5 to 5.2 per cent; the risk of delirium (illusions, disorientation, hallucinations or extreme excitement) is 10 to 30

per cent and the risk of a significant cognitive decline is 33 to 83 per cent.

Researchers at the Duke Medical Center now report that the cognitive decline persists for at least five years after the operation. This finding clearly supports common reports by patients that they are "just not the same" after the surgery. The observed cognitive changes involve loss of memory, problems with following directions, mental arithmetic, and planning complex actions. Mood swings, frustration, and short tempers are

also common side effects of bypass surgery. The Duke researchers found a high (53 per cent) average decline in cognitive function at the time of discharge from the hospital when compared to the base level prior to the operation. The decline was reduced to 36 per cent after six weeks and to 24 per cent after six months. Surprisingly, after five years the decline had worsened to 42 per cent indicating that 42 per cent of patients had a cognitive performance significantly below their level before surgery. The researchers believe that after effects from anesthesia and the

“showers” of blood clots released during bypass surgery are responsible for the adverse effects on the brain.

*Newman, M.F., et al. Longitudinal assessment of neurocognitive function after coronary-artery bypass surgery. **New England Journal of Medicine**, Vol. 344, February 8, 2001, pp. 395-402*

*Selnes, Ola A. and McKhann, Guy M. Coronary-artery bypass surgery and the brain. **New England Journal of Medicine**, Vol. 344, February 8, 2001, pp. 451-52 (editorial)*

Folic acid protects against pancreatic cancer

BETHESDA, MARYLAND. Although pancreatic cancer accounts for only 2 per cent of all cancers worldwide it is the fifth leading cause of cancer deaths in the US. The five-year survival rate is less than 5 per cent. Researchers at the National Cancer Institute and the Finnish National Public Health Institute now report that an adequate folic acid intake can materially reduce the risk of developing the cancer. Their study included over 27,000 healthy male smokers aged 50 to 69 years when enrolled in 1985. Thirteen years later 157 of the men had developed cancer of the pancreas. A review of dietary records revealed that the men with a daily dietary folate intake of more than 373 micrograms/day had half the risk of pancreatic cancer than did the men with an intake of less than 280 micrograms/day. This significant risk reduction held true even after adjusting for other potential risk factors. As expected, the most serious risk factor was smoking. Men who smoked more than 25 cigarettes a day had an 82 per cent higher risk

than men who smoked less than 14 a day. The researchers found no correlation between the risk of pancreatic cancer and alcohol consumption or dietary intake of methionine, vitamin B6 or vitamin B12.

Supplementing with folic acid seemed to have a slightly negative effect. The researchers point out that the supplement takers had significantly more health and alcohol-related problems than did the non-takers and that the number of supplement takers was too small to draw statistically significant conclusions. They caution that the issue could be clouded by earlier findings from animal experiments that, while folic acid supplementation may be effective in preventing cancer from starting, it may actually enhance tumor development at a later stage.

*Stolzenberg-Solomon, Rachael Z., et al. Dietary and other methyl-group availability factors and pancreatic cancer risk in a cohort of male smokers. **American Journal of Epidemiology**, Vol. 153, April 1, 2001, pp. 680-87 [51 references]*

Soy products prevent hot flashes

GIFU, JAPAN. Soy products contain isoflavone a dietary estrogen. Dietary estrogens have effects similar to those exhibited by estrogen produced in the body. Japanese researchers therefore reasoned that soy products and isoflavone (daidzein and genistein) should help alleviate hot flashes in women going through menopause. Their recently completed study proved them right. The study involved 1106 premenopausal women between the ages of 35 and 54 years when first enrolled in 1992. During six years of follow-up 101 women had new moderate or severe hot flashes according to the Kupperman test of

menopausal distress. Analysis of food frequency questionnaires completed by the women at entry showed that women with a high consumption of soy products (median intake of 115.9 grams/day) had half the risk of experiencing hot flashes of moderate to severe intensity than did women with a low consumption (median intake of 44.5 grams/day). Correspondingly, the women with a high intake of isoflavone (50.8 mg/day median) had a 58 per cent lower risk of moderate to severe hot flashes than did the women with a low intake (20.5 mg/day median). On the other hand, the women who smoked had a four times greater

risk of having moderate to severe hot flashes than did the non-smokers. The researchers conclude that consumption of soy products (tofu, soy milk, miso soup, and soybeans prepared in other ways) is a practical strategy for preventing hot flashes

and presents a viable alternative to conventional hormone replacement therapy.

Nagata, Chisato, et al. Soy product intake and hot flashes in Japanese women: results from a community-based prospective study. American Journal of Epidemiology, Vol. 153, April 15, 2001, pp. 790-93

NEWSBRIEFS

“Ribbed thighs” linked to computer exposure. *Lipoatrophia semicircularis* is a disorder characterized by semicircular depressions appearing mostly on the upper legs. It is more commonly known as “ribbed thighs”. Until very recently it was thought to be an extremely rare disease. However, researchers at the Flemish Institute for Technological Research have now exploded the myth. Checking employees of just two major companies uncovered 400 cases. The researchers believe that the disorder is a result of exposure to electric fields from computer equipment exacerbated by low relative humidity. *European Agency for Safety and Health at Work News, 1st Quarter, 2001, p. 12*

Tibetan medicine benefits diabetics. Diabetes is an extremely common condition in Tibet. Thus it is not surprising that Tibetan doctors have developed herbal medicines that are highly effective in the treatment of type 2 diabetes. A recent clinical trial carried out at Dharamsala and New Delhi compared standard Western diabetes treatment (control group) with a group also following American Diabetes Association guidelines, but in addition being given two to four Tibetan diabetes medicines. The patients in the Tibetan medicine group exhibited substantially better glucose control than the control group after 12 and 24 weeks of treatment.

Diabetes Care, January 2001, pp. 176-77

Poor anticoagulation control among the elderly. Initiating warfarin (Coumadin) therapy requires close control of patients’ INR (international normalized ratios) during the first three days. INR is a measure of the blood’s tendency to coagulate and should normally be less than 4. Higher values carry a much higher risk of internal bleeding and hemorrhagic stroke.

Doctors at the Royal Victoria Infirmary in Newcastle report that older people are particularly susceptible to developing high INRs and therefore need closer monitoring. They found that 62 per cent of patients over 70 years of age had INR values over 4 during their initiation. This compares to only 29 per cent of patients below the age of 70.

Age and Ageing, November 2000, p. 551

USA cuts grants for alternative medicine studies. The National Center for Complementary and Alternative Medicine (NCCAM) is expected to reduce the number of grants for alternative medicine research projects in 2001. Last year the NCCAM supported 45 projects; this year it expects to support only 38 projects. Among the projects supported are one to study the effects of tart cherries and soy products on cancer pain, one to study the effect of herbs on the growth of cancer cells, and one to evaluate the effectiveness of the Chinese herbal regimen PC-SPES in combating prostate cancer.

Reuters Medical News, February 6, 2001

Estrogen may benefit schizophrenics. Australian psychiatrists have discovered that wearing estrogen skin patches in combination with taking the antipsychotic risperidone (Risperdal) can markedly reduce schizophrenia symptoms in women. Dr. Jayashri Kulkarni, a psychiatrist at the Dandenong Psychiatry Research Centre in Melbourne, calls the treatment very promising. He points out that several patients in the estrogen group markedly reduced their terrible hallucinations and hearing of voices after just a few days using the estrogen patch.

New Scientist, March 3, 2001, p. 11

THE AFIB REPORT

Welcome to the fifth issue of The AFIB Report. In this issue we continue with our reporting of the survey results and begin dealing with the nitty gritty of living with LAF. Enjoy!

Survey Results – Part II

Most survey participants have a vivid memory of their first LAF episode. The most common trigger of that first one was emotional or work-related stress (26%) closely followed by physical overexertion at 24%. Caffeine, alcohol, and ice-cold drinks were next at 10%, 6% and 8% respectively. Other less common triggers were severe illness or a viral infection (experienced by 6% of respondents), dehydration (4%), and rest (4%). Digestive periods, coughing and burping, pharmaceutical drugs, surgery, electromagnetic radiation, and toxic chemicals round off the list of initial triggers with 2% (1 respondent) each.

The triggers of subsequent episodes follow in the footsteps of the first one. The overwhelming favorite for the title of most important trigger is emotional or work-related stress. A full 50% of all respondents listed stress as a trigger. Physical overexertion was next at 24% closely followed by alcohol (including wine) and rest at 22% each. The digestive period following a heavy meal was a trigger for 18%, caffeine was mentioned by 16%, and an ice-cold drink by 12%. Ten per cent reported that MSG (monosodium glutamate) was a trigger for them and 6% said that lying on the left side would set off an episode. Aspartame (NutraSweet) was mentioned as a trigger by two respondents (4%) as was chocolate, coughing and burping, and flying (at high altitudes). Three men over 30 years of age (6%) felt that their episodes were cyclical in nature and not related to any specific trigger. Other triggers mentioned were aged cheese, sugar, food additives, acid indigestion, a hot bath, NyQuil (a cold remedy), electromagnetic radiation, toxic chemicals, hypoglycemia, high blood pressure, and changes in weather patterns. Please note that the percentages do not add up to 100 because many respondents listed more than one trigger.

The triggers uncovered in the LAF survey are similar to those found by James Driscoll in his on-line survey (<http://www.dialsolutions.com/af/database/stats.html>). In James' survey based on 105 entries stress again was the clear "winner" followed by alcohol, caffeine, exercises, fatigue, and rest and resting after exercise. Cold drinks, MSG, chocolate, bending over or lying on the left side were other important triggers.

It is clear that the triggers for LAF are many and varied and highly specific to each individual except for excessive emotional and physical stress which is pretty well universal.

The frequency and duration of individual episodes varied considerably among survey participants. The average number of episodes over the past 12 months was 27 (30 for men over 30 years, 6 for men under 30, and 21 for women). The range was 0 to 200 episodes and 5 out of the 50 respondents had chronic LAF.

The average number of episodes for the past 6 months was 16 (18 for men over 30 years, 2 for men under 30, and 11 for women) with a range of 0 to 125. The episodes lasted an average of 30 hours (35 hours for men over 30, 14 hours for men under 30, and 13 hours for women) with a range of a couple of minutes to over 500 hours.

The average total time spent in fibrillation over the past 6 months worked out to 172 hours (203 hours for men over 30, 29 hours for men under 30, and 71 hours for women). The average length of the longest episode was 387 hours (455 hours for men over 30, 16 hours for men under 30, and 187 hours for women). All told the average time spent in fibrillation over the past 180 days (ignoring chronic LAF) worked out to about 4% or about 1 day (24 hours) per month. The range varied widely from 0 to 17%.

The most "popular" time for an episode to start was between 6 PM and midnight (38% of all episodes) followed by the period between midnight and 8 AM (32%). Episodes were rarest in the morning (8 AM to noon) at 13% and a little more common between noon and 6 PM at 17%. This would indicate that about 32% of all episodes are of a purely vagal nature, 13% are probably purely adrenergic, and the remaining

55% could be either adrenergic or vagal. They are most likely vagal if they occur after lying down or during a digestive period.

Half of all participants did not know how to abort an episode. Others have had some limited success in stopping an episode before it takes hold, but there certainly does not seem to be any one surefire way of aborting one. Following are some of the comments received on this subject:

- Sometimes deep breathing appears to avoid onset.
- On two occasions I may have shortened the episode by drinking a teaspoon of Epsom salt in a glass of water.
- I think maybe taking atenolol may be helping abort episodes.
- I try to calm down and very carefully clear my throat and get the tickling feeling out of my throat and I seem to recover. I also drink water and take a small Ativan (tranquillizer).
- Valsalva and I/V magnesium infusion following by vigorous exercise.
- Walking, changing position in bed to the right side has worked sometimes.
- I lie down and listen to calming music. I have a special CD that works, but only after my heart beats crazy for a few hours. It doesn't work right away after an episode begins.
- Sometimes with ectopic beats I do a Valsalva type maneuver and the odd beats go away.
- Sometimes getting up and moving works if I have been lying down and feel premature beats coming.
- I am not on a regular administration of any anti-arrhythmic drugs, but I sometimes take sotalol (40-80 mg) when I feel an episode coming on. Since my pulmonary vein ablation on 12/1/00 I have been increasingly fibrillation-free. I have had no episodes for 40 days at this writing.
- No reliable way, but sometimes it helps to take 12.5 or 25 mg of atenolol (Tenormin).
- Celery juice (thanks to a posting on your site) seems to stave episodes sometimes, but not every time.
- I can some times delay the onset if I raise my heart beat (by running up a flight of stairs when I have the first ectopic beats) but I'll be in AF within an hour or so.
- Once the episode starts I have found that exercise 24 hrs later ends it; this does not work if the attack was precipitated by exercise.
- I used to be able to stop an episode with extra CoQ10, L-carnitine and Mg.
- During the day, standing up immediately and moving around. Sometimes in doing this, I will burp, which relieves pressure, which aborts the episode.
- Yes, beta-blocker verapamil.
- Rapid beats stopped by using the Valsalva maneuver.
- I take a quick bite out of a 10 mg propranolol tablet that is always in my pocket, and let it dissolve under my tongue. It seems very effective, almost always works.
- I was a chronic afibber and the only thing that helped me was to take a Xanax because I used to get anxiety and panic attacks along with the afib that didn't help the afib.
- Rest and breathe slowly and deliberately.
- Yes, I do some deep breathing (yoga) exercises focusing particularly on the exhaling, really squeezing the midriff.
- Burping and compressing have worked quite often for me.
- Sit down, loosen clothing, start deep breathing/biofeedback, take an aspirin and I usually convert in 15-20 minutes.

That's it for part II of the results. Stay tuned for more!

Dealing with LAF

You have experienced your first atrial fibrillation episode. Yes, episode is a less threatening description, but the first time you feel your heart beating wildly and totally out of control it certainly seems more like an

attack. Anyway, you survived, as you surely will, your first bout with atrial fibrillation. You probably went to an emergency clinic and saw a cardiologist or electrophysiologist. After a battery of tests you were diagnosed with lone (primary, paroxysmal) atrial fibrillation. More than likely, the doctor told you that LAF is a nuisance, but “it is not going to kill you”. You now have four choices to make:

1. Accept your condition and learn to live with it;
2. Get your doctor to prescribe you a drug that may or may not help and most assuredly will have serious side effects;
3. Undergo heart surgery (ablation or maze procedure) to deal with the symptoms of what is basically a nervous system disorder;
4. Do your own research and find the ways of preventing episodes that work for you.

Whatever you decide, do not – ABSOLUTELY NOT – accept a prescription for digoxin (Lanoxin, digitalis). This drug has been proven to worsen LAF and may make it chronic. Actually, if your doctor prescribes it for you look for another physician – your present one is obviously not up-to-date!

If you have decided on option 1 you probably would not be reading this. Option 2 has been covered in past issues of The AFIB Report and option 3 will be covered in a future issue. In this issue we will concentrate on helping you with option 4.

First Steps

The very first thing you should do is to keep a journal of your episodes. It does not have to be elaborate, just the date and time when the episode began, its duration, and what you feel might have been the trigger. Keep in mind that an episode starting early in the morning could have been triggered by a stressful event the day before or a cup of coffee before bedtime. The journal becomes essential when it comes to determining the nature of your LAF (adrenergic or vagal) and possible trigger factors.

Next you should eliminate the possibility of medical problems other than heart-related ones that are already known to be non-existent. Thyrotoxicosis or hyperthyroidism (an overactive thyroid gland), pheochromocytoma (a tumor on the adrenal gland) and hypoglycemia come immediately to mind. Thyrotoxicosis and pheochromocytoma both require a surgical solution, but you can take care of hypoglycemia yourself.

Triggers and Lifestyle Choices

The obvious next step is to determine your triggers and eliminate them if this is what you decide to do. That's right – “If this is what YOU decide to do”! Eliminating triggers may involve a serious trade-off between your lifestyle and the discomfort caused by an episode. In my own case, I know that a cup of coffee or a sip of wine will set off an episode so I have decided to eliminate alcoholic beverages and caffeine from my life. I enjoy a glass of wine or a good cup of coffee just as much as the next person, but weighed against the almost near certainty of a bout of LAF lasting a couple of days followed by a week of feeling pretty lousy, I decided to forego the pleasure. Other triggers such as aspartame and monosodium glutamate (MSG) are a lot easier to go without. So ultimately it is a trade-off between giving up certain things or living with the consequences.

The big trigger is emotional and job-related stress. The best approach to this one is to slow down a little and try to take a more relaxed approach to life. Yoga, qi gong, tai chi, deep breathing and other relaxation exercises can also be extremely helpful. Twenty-three per cent of the survey participants do one or more of these exercises and 90% have found them beneficial. Meditation is another good approach. Twenty-one per cent of respondents practice meditation on a regular basis and 80% find it beneficial.

Magnesium Deficiency

Once you have your triggers under control you should consider supplements, herbal remedies and diet changes. The first supplement to consider, apart from a daily high-potency vitamin pill, is magnesium. As discussed in earlier issues of The AFIB Report magnesium is extremely important in ensuring a steady heart beat and overall heart health(1-7). Magnesium and potassium calms the heart and oppose the action of sodium and calcium which excites it. About 99% of the body's magnesium is found in tissues and bones

and the heart tissue is particularly rich in this vital mineral. Only 1% of the body's magnesium stores is found in the blood so a regular blood test is a very poor indicator of your magnesium status. Ideally you would measure the magnesium level in your heart tissue to see if you are deficient, but this is not terribly practical. Fortunately, researchers at the Cedar-Sinai Medical Center in Los Angeles have discovered that there is a direct correlation between heart tissue magnesium level and the concentration found in epithelial cells scraped from under the tongue or from between the gums and the upper and lower lips(8). Trace Elements Inc. (www.traceelements.com) can do the magnesium testing and can also recommend a physician in your area who can do the cell scraping. Thirteen per cent of the respondents have had their intracellular magnesium levels measured and 83% of them were deficient.

Magnesium Supplementation

There is considerable medical evidence that a magnesium infusion can prevent or stop arrhythmias(1,5-7). At least 10% of the survey participants found weekly or monthly magnesium infusions useful in preventing episodes. The evidence supporting the use of oral magnesium supplements as a means of correcting a deficiency is sparser. The Cedars-Sinai researchers reported a 10% increase in intracellular magnesium levels after six months of supplementation with 365 mg/day of elemental magnesium(8). There is also lots of anecdotal evidence of the benefits to afibbers of supplementing with magnesium. Magnesium aspartate, gluconate or citrate are probably the best choices as the cheaper and more common magnesium compounds (magnesium oxide and magnesium carbonate) are poorly absorbed. Magnesium absorption tends to decrease as body stores are replenished so there is little chance of overdosing; nevertheless, patients with end-stage renal disease should not supplement with magnesium(9). Magnesium requires vitamin D for optimum absorption so it is important to get adequate unprotected sun exposure daily or to take a vitamin D-3 supplement daily when using oral replenishment of magnesium(9).

So the bottom line as far as magnesium is concerned is:

- Consider having your intracellular tissue level of magnesium determined and if deficient correct it;
- Talk to your doctor or naturopath about having weekly or monthly magnesium infusions for a while to see if this will decrease the frequency and severity of your episodes;
- Take an oral magnesium supplement. I have settled on three capsules of magnesium/potassium aspartate that provides me with 300 mg of elemental magnesium and 300 mg of elemental potassium on a daily basis.

AFIB News

Circadian variation in LAF episodes. A team of Canadian cardiologists has discovered that there is a distinct pattern to the occurrence of atrial fibrillation episodes. Their study which involved 67 patients (58% with LAF) concluded that the frequency of episodes peaks at around 4 AM (4 AM to 5 AM) and around 4 PM (3 PM to 7 PM) and is at its lowest at around 10 AM. The peaks are more pronounced in the case of episodes of relatively short duration and are eliminated by beta-blockers and amiodarone. It is clear from the data that amiodarone actually increases the overall frequency of episodes. Editor's Note: The peak times of 4 AM and 4 PM are of particular significance when viewed in the light of Traditional Chinese Medicine. At 4 AM the *Lung* is at its peak and the *Bladder* at its lowest. At 4 PM the *Bladder* is at its peak and the *Lung* at its lowest. Coincidence? Perhaps. A clue? Maybe. Any TCM practitioners out there who would care to comment?

American Journal of Cardiology, Vol. 87, March 15, 2001, pp. 794-98

Isometric exercise may stop AF episodes. Italian researchers have discovered that isometric exercise may help terminate an atrial fibrillation episode. In the course of evaluating the effectiveness of ibutilide for cardioversion they discovered that the drug worked significantly better if the patients used a handgrip during the drug infusion. The patients squeezed the handgrip as hard as they could for 15 seconds using their dominant hand. The researchers correlated the restoration of sinus rhythm with an increase in mean atrial cycle length (CS). CS increased 40% with ibutilide alone and 57% when the ibutilide infusion was combined with the handgrip exercise. The handgrip exercise on its own increased CS by 21%. Editor's Note: Using

the handgrip definitely resulted in a more ordered heartbeat judging from the electrograms accompanying the article. It also increased the heart rate and blood pressure. Worth a try!
American Journal of Cardiology, Vol. 87, March 15, 2001, pp. 798-801

Parasympathetic nervous system and insulin. It is generally assumed that insulin secretion is triggered by eating and regulated primarily by the absorbed nutrients from the meal. Researchers at the University of Cincinnati now question this assumption. In an experiment involving rhesus monkeys (Macaques) they clearly established the fact that the parasympathetic nervous system plays a major, if not dominant, role in postprandial (after a meal) insulin release. So what does this mean to an afibber? It could explain why LAF episodes often happen after a meal. If the parasympathetic system is activated in order to cause insulin production to occur it is possible that this higher level of activation could be instrumental in initiating an episode. So restricting the intake of carbohydrates in the evening meal may be worth trying if your episodes tend to occur after supper.

Journal of Clinical Endocrinology & Metabolism, Vol. 86, March 2001, pp. 1253-59

That's it for this May issue of The AFIB Report. In the next issue we will carry on with the reporting of survey results, discuss the connection between dental amalgams and LAF, and provide some good advice on dealing with hypoglycemia. If time and space permits we may also tackle the GERD (gastro esophageal reflux disease) connection.

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